IN THE CLAIMS

Please revise the claims as follows, with changes being shown by strikethrough, underlining, and/or double brackets. This listing of claims replaces the listing of claims contained in the application.

1. (Currently amended) A conveyance system [[(10)]] comprising:

a conveyance carriage assembly [[(12)]] for carrying a workpiece [[(1)]] thereon; and

conveyance units ~~(16, 18)~~ to which said conveyance carriage assembly [[(12)]] is conveyed;

wherein said conveyance carriage assembly [[(12)]] has driven members;

said conveyance units ~~(16, 18)~~ are separable into units;

each of said units having:

a rail [[(28)]] for guiding said conveyance carriage assembly [[(12)]]; and

a driver associated with said rail [[(28)]] for driving said conveyance carriage assembly [[(12)]] through said driven members; and

wherein when the last one of said driven members is separated from a movable range of said driver, at least the foremost one of said driven members is relayed to said driver of the unit adjacent thereto and said conveyance carriage assembly [[(12)]] is continuously conveyed.

2. (Currently amended) A conveyance system according to claim 1, wherein each of said units includes:

two said rails [[(28)]]; and

two said drivers associated respectively with two said rails;

wherein two said rails extend parallel to each other; and

two said drivers convey said conveyance carriage assembly [[(12)]] in opposite directions, respectively.

3. (Currently amended) A conveyance system according to claim 2, wherein said units

comprise three units including:

a horizontal conveyance unit [[(16)]] for linearly conveying said conveyance carriage assembly [[(12)]];

a gradient conveyance unit [[(18)]] for conveying said conveyance carriage assembly [[(12)]] on an upward grade and/or a downward grade; and

a direction-changing unit [[(20)]] for changing a conveyance direction of said conveyance carriage assembly [[(12)]];

wherein a plurality of types of said units are combined with each other.

4. (Currently amended) A conveyance system according to claim 1, wherein said driver comprises an annular chain [[(30)]] which is circulatingly drivable through a sprocket [[(36)]]; and

said driven members comprise driven sprockets ~~(246, 266c, 266d)~~ held in mesh with said annular chain [[(30)]] or a presser plate [[(242]]) for pressing rollers [[(30a)]] of said annular chain [[(30)]].

5. (Currently amended) A conveyance system according to claim 1, wherein said rail [[(28)]] is in the form of a plate which is elongate in a conveyance direction; and

said conveyance carriage assembly [[(12)]] moves laterally of said rail [[(28)]], and carries the workpiece [[(1)]] on a side of said rail [[(28)]].

6. (Currently amended) A conveyance system according to claim 1, wherein said conveyance units ~~(16, 18)~~ include:

a plurality of horizontal conveyance units [[(16)]] for conveying said conveyance carriage assembly [[(12)]] in a substantially horizontal direction; and

a gradient conveyance unit [[(18)]] interconnecting two of said horizontal conveyance units [[(16)]];

wherein said gradient conveyance unit [[(18)]] comprises:

a gradient conveyance drive sprocket [[(170)]] disposed closely to an end of the gradient conveyance unit [[(18)]], said gradient conveyance drive sprocket [[(170)]] being rotatable by said driver;

a gradient conveyance driven sprocket [[(172)]] disposed closely to an opposite end of the gradient conveyance unit [[(18)]], said gradient conveyance driven sprocket [[(172)]] being rotatable;

a gradient conveyance annular chain [[(162)]] held in mesh with said gradient conveyance drive sprocket [[(170)]] and said gradient conveyance driven sprocket [[(172)]], said gradient conveyance annular chain [[(162)]] being circulatingly drivable; and

a gradient guide [[(176)]] for supporting, from below, an upper portion of said gradient conveyance annular chain [[(162)]] which imparts drive power to said conveyance carriage assembly [[(12)]] and a lower portion of said gradient conveyance annular chain [[(162)]] which is guided in a direction opposite to said upper portion, making said gradient conveyance annular chain [[(162)]] upwardly convex in shape;

wherein said conveyance carriage assembly [[(12)]] has a gradient conveyance driven sprocket [[(246)]] positioned near a leading end of the conveyance carriage assembly [[(12)]] in a conveyance direction and held in mesh with said gradient conveyance annular chain [[(162)]]; and

wherein after said conveyance carriage assembly [[(12)]] is pushed out from said horizontal conveyance unit [[(16)]], said driven sprocket [[(246)]] is brought into mesh with said gradient conveyance annular chain [[(162)]], and said conveyance carriage assembly [[(12)]] is conveyed by said gradient conveyance annular chain [[(162)]] along the shape of said gradient guide [[(176)]].

7. (Currently amended) A conveyance system according to claim 6, wherein said conveyance carriage assembly [[(12)]] comprises at least two conveyance carriages

interconnected longitudinally by a vertically swingable or elastically deformable joint [[(208)]].

8. (Currently amended) A conveyance system according to claim 6, wherein each of said horizontal conveyance units [[(16)]] has:

a horizontal conveyance drive sprocket [[(36)]] disposed closely to an end of the horizontal conveyance unit [[(16)]], said horizontal conveyance drive sprocket [[(36)]] being rotatable by said driver;

a horizontal conveyance driven sprocket [[(38)]] disposed closely to an opposite end of the horizontal conveyance unit [[(16)]], said horizontal conveyance driven sprocket [[(38)]] being rotatable; and

a horizontal conveyance annular chain [[(30)]] held in mesh with said horizontal conveyance drive sprocket [[(36)]] and said horizontal conveyance driven sprocket [[(38)]], said horizontal conveyance annular chain [[(30)]] being circulatingly drivable and being disposed in a position different from said gradient conveyance annular chain [[(162)]] in a transverse direction of said horizontal conveyance unit [[(16)]];

wherein said conveyance carriage assembly [[(12)]] has a push-out driven sprocket [[(266d)]] positioned closely to a rear end of the conveyance carriage assembly [[(12)]], said push-out driven sprocket [[(266d)]] being positioned above said horizontal conveyance annular chain [[(30)]] when no external force is applied thereto; and

wherein as said conveyance carriage assembly [[(12)]] moves, said driven sprocket [[(266d)]] is lowered into mesh with said horizontal conveyance annular chain [[(30)]] by a push-out cam plate [[(56)]] in said horizontal conveyance unit [[(16)]].

9. (Currently amended) A conveyance system according to claim 8, wherein said driven sprocket [[(266d)]] is lowered by:

a force-bearing member [[(270)]] for directly bearing a pressing force from said push-out cam plate [[(56)]]; and

a resilient member [[(268)]] compressible in interlinked relation to said force-bearing member [[(270)]].

10. (Currently amended) A conveyance system according to claim 6, wherein said conveyance carriage assembly [[(12)]] has:

a lowering driven sprocket [[(266c)]] disposed closely to a rear end of the conveyance carriage assembly [[(12)]], said lowering driven sprocket [[(266c)]] being positioned above said gradient conveyance annular chain [[(162)]] when no external force is applied thereto;

wherein as said conveyance carriage assembly [[(12)]] moves, said driven sprocket [[(266c)]] is lowered into mesh with said gradient conveyance annular chain [[(162)]] by a lowering cam plate [[(180)]] disposed in a downgrade region of said gradient conveyance unit [[(18)]].

11. (Currently amended) A conveyance system according to claim 10, wherein said driven sprocket [[(266c)]] is lowered by:

a force-bearing member [[(270)]] for directly bearing a pressing force from said lowering cam plate [[(180)]]; and

a resilient member [[(268)]] compressible in interlinked relation to said force-bearing member [[(270)]].

12. (Currently amended) A conveyance system according to claim 1, further comprising:

a drive gear [[(94)]] rotatable by a rotational drive source;

a first driven gear [[(72)]] held in mesh with said drive gear [[(94)]], said first driven gear [[(72)]] being rotatable by rotation transmitted from said drive gear [[(94)]];

a second driven gear [[(74)] held in mesh with said drive gear [[(94)]], said second driven gear [[(74)]] being rotatable by rotation transmitted from said drive gear [[(94)]] in a direction opposite to said first driven gear [[(72)]];

a first rotational shaft [[(68)]] as a rotational shaft of said first driven gear [[(72)]];

a second rotational shaft [[(70)]] as a rotational shaft of said second driven gear [[(74)]];

a first circulative driver [[(30)]] for being circulatively drivable in response to rotation of said first rotational shaft [[(68)]]; and

a second circulative driver [[(33)]] for being circulatively drivable in a direction opposite to said first circulative driver [[(30)]] in response to rotation of said second rotational shaft [[(70)]];

wherein said conveyance carriage assembly [[(12)]] is conveyed by said first circulative driver [[(30)]] and/or said second circulative driver [[(33)]].

13. (Currently amended) A conveyance system according to claim 12, wherein each of said drive gear [[(94)]], said first driven gear [[(72)]], and said second driven gear [[(74)]] comprises a bevel gear, and said first rotational shaft [[(68)]] and said second rotational shaft [[(70)]] are coaxial with each other and perpendicular to the axis of said drive gear [[(94)]].

14. (Currently amended) A conveyance system according to claim 12, further comprising:

a first inner bearing [[(67a)]] by which an end of said first rotational shaft [[(68)]] is rotatably supported, and a second inner bearing [[(67b)]] by which an end of said second rotational shaft [[(70)]] is supported, said first inner bearing [[(67a)]] and said second inner bearing [[(67b)]] being disposed between said first driven gear [[(72)]] and said second driven gear [[(74)]]; and

a first outer bearing [[(78)]] by which an end of said first rotational shaft [[(68)]] is rotatably supported, and a second outer bearing [[(78)]] by which an end of said second rotational shaft [[(70)]] is supported, said first outer bearing [[(78)]] and said second outer bearing [[(78)]] being disposed on sides of said first driven gear [[(72)]] and said second driven gear [[(74)]] which are opposite to confronting faces thereof.

15. (Currently amended) A conveyance system according to claim 12, wherein said first circulative driver [[(162)]] is driven by a first drive sprocket [[(36)]] mounted on said first rotational shaft [[(68)]];

said second circulative driver [[(162)]] is driven by a second drive sprocket [[(37)]] mounted on said second rotational shaft [[(70)]]; and

said first circulative driver [[(162)]] and said second circulative driver [[(162)]] comprise annular chains [[(30)]], respectively, and are circulatingly drivable by rotatable driven sprockets [[(38)]].

16. (Currently amended) A conveyance system according to claim 1, wherein said conveyance carriage assembly [[(12)]] has:

a retaining mechanism for retaining the workpiece [[(1)]];

a retaining member operating mechanism ~~(86, 98, 100, 128a, 128b)~~ for operating a retaining member of said retaining mechanism;

a resilient member ~~(1092, 1134)~~ for pressing said retaining member in a direction opposite to the direction in which said retaining member is operated by said retaining member operating mechanism ~~(86, 98, 100, 128a, 128b)~~;

a main body [[(1056)]] supporting said retaining mechanism and said retaining member operating mechanism ~~(86, 98, 100, 128a, 128b)~~; and

a roller ~~(216, 218)~~ mounted on said main body [[(1056)]] and engaging said rail [[(28)]];

wherein said retaining member operating mechanism ~~(86, 98, 100, 128a, 128b)~~ operates said retaining member through operation of a drive mechanism [[(1024)]] disposed closely to said rail [[(28)]], and is displaced while being guided along said rail [[(28)]].

17. (Currently amended) A conveyance system according to claim 16, wherein said retaining mechanism comprises:

a clamp mechanism ~~(1078a, 1078b)~~ having a clamp ~~(1096a, 1096b)~~ operated by said retaining member operating mechanism; and

a holding mechanism ~~(1080a, 1080b)~~ having a set of plate members including at least one movable plate ~~(1106, 1108)~~, for holding a portion of said workpiece [[(1)]] which is different from the portion thereof which is gripped by said clamp mechanism ~~(1078a, 1078b)~~, with said set of plate members;

wherein said clamp ~~(1096a, 1096b)~~ and said movable plate ~~(1106, 1108)~~ are displaced by said retaining member operating mechanism to hold or release said workpiece [[(1)]].

18. (Currently amended) A conveyance system according to claim 16, wherein an engaging member [[(1074)]] engageable by a hook [[(1038)]] of a first lock mechanism [[(1036)]] disposed closely to said rail [[(28)]] when said retaining member operating mechanism operates said retaining member through operation of said drive mechanism, is mounted on said main body [[(1056)]].

19. (Currently amended) A conveyance system according to claim 16, further comprising:

a pocket ~~(1076a, 1076b)~~ for supporting an end of said workpiece [[(1)]] inserted therein.

20. (Currently amended) A conveyance system according to claim 19, wherein said pocket ~~(1076a, 1076b)~~, said clamp mechanism, and said holding mechanism ~~(1080a, 1080b)~~ are mounted on said main body successively upwardly in the order named, and an elongate member as said workpiece [[(1)]] is conveyed in an upstanding state.

21. (Currently amended) A conveyance system according to claim 20, wherein the elongate member as said workpiece [[(1)]] comprises a connecting rod for an internal combustion engine.

22. (Currently amended) A conveyance system according to claim 1, further comprising:

a conveyance carriage assembly stopping mechanism [[(2010)]] for stopping the conveyance carriage assembly [[(12)]] for carrying and conveying the workpiece [[(1)]];

said conveyance carriage assembly stopping mechanism [[(2010)]] comprising:

a stopping engaging member [[(232)]] mounted on said conveyance carriage assembly [[(12)]];

a first arm [[(2100)]] and a second arm [[(2102)]] which extend in a conveyance direction of said conveyance carriage assembly [[(12)]] and have respective shanks having pivotally supported ends;

a displacing mechanism [[(2106)]] for displacing said first arm [[(2100)]] and said second arm [[(2102)]] toward and away from each other; and

an entry path [[(2110)]] defined between said first arm [[(2100)]] and said second arm [[(2102)]] for said stopping engaging member [[(232)]] to enter, said entry path [[(2110)]] having a narrower portion [[(2126)]] having a width which is progressively smaller in a direction of travel of said stopping engaging member [[(232)]], and a wider portion [[(2128)]] which is wider than said narrower portion [[(2126)]];

wherein said conveyance carriage assembly [[(12)]] is decelerated when said first arm [[(2100)]] and said second arm [[(2102)]] slide against said stopping engaging member [[(232)]] in said narrower portion [[(2126)]]; and

said conveyance carriage assembly [[(12)]] which has entered said wider portion [[(2128)]] after said narrower portion [[(2126)]] is spread by said stopping engaging member [[(232)]] which presses said first arm [[(2100)]] and said second arm [[(2102)]], is stopped by said first arm [[(2100)]] and said second arm [[(2102)]] which engage said stopping engaging member [[(232)]].

23. (Currently amended) A conveyance system according to claim 22, wherein said first

arm [[(2100)]] and said second arm [[(2102)]] have a support [[(2130)]] which supports said stopping engaging member [[(232)]].

24. (Currently amended) A conveyance system according to claim 22, further comprising:

a second lock mechanism [[(2108)]] for positioning and fixing said conveyance carriage assembly [[(12)]] which is stopped, said second lock mechanism [[(2108)]] having a stopper engaging member [[(2152)]] for engaging a stopper [[(238)]] mounted on said conveyance carriage assembly [[(12)]].

25. (Currently amended) A conveyance system according to claim 22, wherein said stopping engaging member [[(232)]] comprises a rotatable cylinder.

26. (Currently amended) A conveyance system according to claim 22, wherein said stopping engaging member [[(232)]] doubles as a guided member which is guided by a direction-changing unit [[(20)]] which is interposed between a first conveyance section for conveying said conveyance carriage assembly [[(12)]] in one direction and a second conveyance section for conveying said conveyance carriage assembly [[(12)]] in a direction different from said one direction.

27. (Currently amended) A conveyance system according to claim 26, wherein each of conveyance carriages of said conveyance carriage assembly [[(12)]] has two stopping engaging members [[(232)]], each of said stopping engaging members [[(232)]] doubling as a guided member which is guided by said direction-changing unit [[(20)]] which interconnects a forward path as said first conveyance section and a return path as said second conveyance section for guiding said conveyance carriage assembly [[(12)]] in a direction opposite to said forward path.